Angling:

The Final EA does not accurately assess angling, below are nine flaws in the assessment of anglers on the Upper Chattooga.

I. Single Variable:

The quality of fishing is not based solely on the single variable of flow-level as the Assessment suggests. The recent visitor capacity analysis only reviewed how flows effect the "quality of fishing experience" and has mistakenly based assessment solely on this single fishing attribute. Conclusions made from such an incomplete assessment are predictably misleading.

Anglers do not base the quality of fishing solely on flow levels, nor on temperature, nor time of day, nor turbidity nor day-of the month nor eye color of their first born child. Using any one variable by itself to measure the "quality of fishing experience" would unlikely be a good determinate of an angler's choice to visit the Chattooga. The DNR angler surveys indicate higher flows result in a slight increase in anglers at the Upper Chattooga and therefore flows alone are not an ideal predictor of when anglers visit the area.

Doug Whittakers 1993 recreational flow manual suggests that numerous variables must be considered when evaluating the fishing quality; yet his Chattooga analysis only collected flow levels on the Chattooga. Whittaker's other variables required for predicting angler quality included, fishing methods, equipment, site topography, fish activity levels, water velocity and water clarity.[1] His book added *"people have multiple motivations for taking a recreation trip, and the absence of good flows does not necessarily mean that users won't go. ... There simply may not be a good correlation between flows and use."*[2] On the Chattooga, Whitaker contradicts his own published flow study manual by ignoring all other variables that would likely predict visitor behavior. By using flow-level exclusively as a predictor of visitor quality

One example of misuse of angler assumptions within the 2009 Final EA can be found on page 116.

"However, Whittaker and Shelby (2007) also documents that acceptable but lower quality fishing opportunities would overlap with optimal boating and acceptable but lower quality technical boating would overlap with optimal fishing."

Without any assumptions regarding visitor behavior and by using all available visitor data this sentence would read as follows…

"However, acceptable fishing flow levels opportunities would overlap with acceptable boating flow levels."

These two sentences obviously have very different meanings and as presented within an EA would cause the reader to draw very different conclusions.

[1] Pg 69 &70 Whittaker, D., Shelby, B., Jackson, W., Beschta, R. 1993. In stream Flows for Recreation: A Handbook on Concepts and Research Methods. U.S. Dept. of Interior: National

[2] page 33 Whittaker, D. , B. Shelby, W. Jackson, and R. Beschta. 1993. Instream flows for recreation: a handbook on concepts and research methods. U.S. Department of Interior, National Park Service, Anchorage, AK

contradicts the methodology suggested by the hired recreational consultant.

Water levels is primarily a kayaker's decision variable, when there is insufficient water to float a boat, a river is unboatable and fluctuations in water level alter the river's boatable characteristics. Utilizing flow-levels exclusively to define the "quality of the angling experience" shows extreme bias by the recreational specialists assigned to this assessment. The fact that AW recommended CRC for conducting the recreational flow study in 2004, and co-authored the study methodology suggest a conflict of interest between the kayak access lobby and the recreational specialists.

II. Acceptable flows not Optimal Flows

The facts do not support the premise that less than "optimal flows" correlate to fewer anglers or even a reduction in overall angler quality. Optimal flows (as defined by the assessment as flows less-than perfect) do not correlate with angler behavior as proven by the angler survey table published by the USFS in the 2004 FEIS.

The 1999 SC DNR report confirmed that higher but less than optimal flows(those under 450cfs) will result in greater numbers of anglers, not fewer as indicated by the EA. See table below.

Survey	Flows @ Hwy 76 Gauge (cfs)	CFS at Burrells Ford	Number of Survey Days	Percentage Survey days	Total # of Anglers	% Anglers	Mean # of anglers/ Survey day
SC DNR 98/99	< 850 (2.0')	<275	33	70%	469	67%	14.2
	850-1400	275-450	11	23%	217	31%	19.7
	>1400 (2.5')	>450	3	6%	16	2%	5.3
	TOTAL		**47**		**702**		**14.9**
The 1999 SC DNR Study was conducted near stocking points within the Burrells Ford- 28 section. Chart data source: 2004 Francis Marion Sumter FEIS, page H-14							

The 1999 DNR report, tabulated above, confirmed more people are fishing during times defined by the EA as "lower quality angling flows" (19.7 verses 14.2). This proves that flows outside of the "optimal range" does not lead to fewer anglers as the EA suggests. The USFS defined the DNR studies as both "excellent" and "good" within the 2006-7 capacity analysis publications, yet these on-site surveys of actual angler use were replaced by a written survey of six anglers, then, analyzed using bogus statistics.

The Best Available Science is ignored and illegally[3] replaced with assumptions and speculation about when anglers fish the Upper Chattooga. The DNR angler surveys were cited as a *"very good source of fishing data"* in the 2006 *Implementation Plan*; *Chattooga VAC*; the data was never considered and replaced by anecdotal surveys from six fisherman on a single day.

How the recreational flow study defined "optimal flows" helps explain why the disparity between the documented reality and assessment assumptions do not correlate. According to the assessment "optimal" is defined as a perfect flow (7 out of 7) rating by expert panels during the flow study. Using the perfect definition of optimal, the assessment then leaps to the conclusion that flow rated six (6 out of 7) or five (5 out of 7) would result in few anglers along the Chattooga, even when the collected data indicates otherwise. The recreation specialist want assessment readers to assume that anglers would simply stay at home on days that flow conditions were not perfect, instead of evaluating the more likely variable of "acceptable" flow levels which was alos collected during the Flow Study.

The quality of angling is not based exclusively on flow levels and the use of "optimal angling flows" to predict visitor behavior does not match the reality of data collected on sight. Anglers base a trip on many attributes including, free-time, availability of fishing locations, season, proximity and sometimes…water levels. What is a predictor of when anglers fish is "acceptable flow levels", above this point anglers simply will not be able to fish. According to the Survey conducted by the DNRs anglers were reported still using the Chattooga when flows were as high as 3feet [or 750cfs as measured by the new gauge at Burrells Ford]. The USFS first reported that only after flow levels were above 450cfs was there a "drop off" in the number of anglers [4].

III: Arbitrarily elimination of data from the assessment:

By using the "mean" ratings to predict angler behavior the assessment eliminated the desired conditions of 50% of the six anglers surveyed.

In 1969 Shafer published *The Average Camper Who Doesn't Exist* in which he described how providing a single, uniform type of recreational opportunity based on averages will leave many

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[3] 40 cfr § 1502.24 Methodology and scientific accuracy."Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.".

[4] 2004 FEIS Sumter USFS appendix H

visitors, quite possibly even the majority, less than satisfied with their experience. However, by offering a range of possibilities, more visitors' preferences can be met. Capturing the full range of acceptable visitor opportunities has become the standard method for collecting visitor preferences during visitor capacity analysis and should have been the methodology for evaluating visitor capacity on the Chattooga Wild & Scenic River.

Only by eliminating 50% of the data collected during the 2007 flow surveys surveys, could the recreational specialists have been able to proclaim a no finding of significant. The incomplete data was then erroneously presented as a full-range of anglers and boaters flow preferences.

One Sumter F.S. management goal is to "*Provide a spectrum of high quality nature-based recreational settings and opportunities that reflect the unique or exceptional resources… [and] to shift limited resources to those opportunities*[5]" Further expanding kayaking through a popular trout stream, numerous swimming areas and undisturbed wildlife habitat would be in direct conflict with this goal and incongruent with agency guidelines.[6]

The recreation specialists presents the incomplete recreational data as the full range of angler preferences, while the actual study data suggest otherwise (at leaast one of the anglers surveyed rated flows of 700cfs "optimal" for spin casting). Clearly the assumtion that flows above 350cfs (or even 450cfs) has no impact on anglers, is inaccurate and the use of this flawed data violates the standards of objectively[7] expected for a NEPA analysis.

IV Fish Behavior:

The presence of active and healthy fish and the sport of angling cannot be separated. How fish behave to the proposed agency action -expanding boating- must be part of the comparative analysis because the introduction of boats onto the Upper Chattooga will cause a flight response in fish which will impact fishing.

American Whitewater published that *"Fish are disturbed by noise and surface activity. Voices carry well over water. Kayaking is the most exhilarating of sports, but fishing is by its*

[5] 2004 Sumter USFS, FEIS p 2-22
[6] FMS 1973.3 "Determine the geographic areas that are likely to influence or be affected"
[7] The CEQ define "Objectivity" as "a measure of whether disseminated information is accurate, reliable, and unbiased and whether that information is presented in an accurate, clear, complete, and unbiased manner."[2002 (Vol. 67 *Federal Register* No. 36, at 8452].

nature a solitary and contemplative activity."[8] Whittaker (from CRC) published that "fishability" involves several elements including **fish activity levels**."[9]

When fish are spooked by passing boats, fish stop feeding. This in turn diminishes the fishing success rate and impacts the angler's expereince. As pointed out by Chief Justice homes "*The causal connection between increased human activity and the decline of commercial activities associated with migratory birds is not 'attenuated,' [see Morrison, 529 U.S., at 612]; it is direct and* ***concrete****. Cf. Gibbs v. Babbitt, 214 F.3d 483, 492 -- 493 (CA4 2000)*[10]."

The availability of wildlife has a direct link to the type, and quality, of recreational opportunities that will remain available on the Upper Chattooga. Even temporary disturbances of the fish (or birds) will result in the diminishment of angling (or birding). The EA acknowledges boats will likely frighten fish, but the indirect effects on fishing quality remains undocumented.

The 2007 Chattooga Analysis published that "*passing boats can 'disturb and displace spawning Chinook salmon if the interactions occur at close proximity*' "[11]. Scientific studies have been conducted on the effect sounds and passing shadows have on fish behavior. A formal letter from Dr. Wagner to Mr. Cleeves on May 07, 2007 provided numerous studies conducted on the flight response of fish due to noise and overhead shadows. The referenced studies included how fish respond by fleeing from loud noise like (Knudsen et al. 1997) and (Laming and Ebbesson 1984; Laming 1987). Scientific reference to fish flight responses to passing shadows include (Ingram and Odum (1941) and (White 2000). This information has been included in numerous correspondence to the USFS and should have been considered in the Environmental Assessment. The best available science indicates overhead shadows and noise – -the actions of boating-- will initiate a flight response (spook) in fish. EA statements must *"be supported by evidence that the agency has made the necessary environmental analyses"* and in this case *"utilize, to the fullest extent possible, information (including statistical information) of organizations, and individuals, in order that duplication of effort and expense may be avoided"*

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[8] American Whitewater; http://www.americanwhitewater.org/content/River_detail_id_2835_ downloaded 3/5/2008

[9] pg 70 Whittaker, D., Shelby, B., Jackson, W., Beschta, R. 1993. In stream Flows for Recreation: A Handbook on Concepts and Research Methods. U.S. Dept. of Interior: National

[10] Chief Justice Holmes dissenting opinion on limitations in the Clean Waters Act

[11] *Page 69, Assessing Visitor Capacity & Conflict on the Upper Chattooga June 200 7, USFS Page 69*

[42 USC § 4345]. By overlooking the few studies that exist on fish behavior or not conducting additional studies , would not meet NEPA requirements. The Best Available Science should be presented objectively within the assessment so that an informed choice can be made regarding effects on fish –and indirectly fisherman- to any proposed agency action.

Documentation of how paddle-sports impacts fishing on other rivers has existed for decades.

- "Boating activities can also lead to conflicts with other users, such as people fishing, taking photographs, or swimming." Chapter 1 Merced WSR CMP/FEIS 2001 NPS
- " unavoidable conflict between canoeing and fishing" ... "anglers and canoers are in direct conflict since canoes scare fish to the bottom of the river and make fishing much more difficult." Pg 52, Rural Sports Tourism , 2007 LOCUM, Scotland
- *"Heavy canoe use is conflicting more and more with many other river users.* ***Many trout streams are no longer fished during the daytime hours because of canoeing disturbances.*** *...According to the US Forest Service, this canoeing pressure has resulted in the deposit of about 20,000 beverage cans and bottles in a 40 mile stretch of the Pine River, Michigan." "In addition, noise, drunkenness, rowdyism, trespass, vandalism and theft are increasing rapidly.* ***Conflicts are common among canoeists and fisherman, sightseers, bird watchers, swimmers and frontage owners."***[12] USFS 1977
- A recent study conducted by UK's Environmental Agency *"identified disturbance caused by canoeists to anglers as an area of conflict"*[13].
- On the Chattooga.."[*t]he recent increase in floaters using the river has had a detrimental effect on the fishing experience. Conflicts have developed on certain sections of the river where floaters and fishermen use the same waters." Id. at 11,849."* Pg 5 AW v. USFS Case 2:06-cv-00074-WCO Document 11 7/7/06
- In 2002, the Southern Forest research assessment published that *"Water attracts a wide variety of visitors, including swimmers, viewers of fish, anglers, and users of muscle- and motor-powered watercraft. The possibilities of conflict are obvious. For the most part, all the uses just listed are incompatible with each other."… "zoning can ensure that different types of users are physically separated"*[14]
- In January of 2007 the British parliament voted against unlimited boater access to UK's inland waterways based on the conflict between anglers and boaters.[15] The report compiled over years of study found boating does conflict with anglers, riparian wildlife and landowner interests. Martin Salter MP argued that ***"Unlimited access to smaller rivers and streams would destroy angling in these locations."***

[12] pg 113, Doehne, USDA Forest Service General Technical Report NC-28. 1977.
[13] p 17 *Countryside Recreation* Volume 9 Number 1 Spring 2001 UK Environmental Agency
[14] *Potential Conflicts Between Different Forms Of Recreation,* 2002, Southern Research Station USDA Forest Service.
[15] "*Effects of Canoeing on Fish Stocks and Angling*" Technical Report W266 UK Environment Agency 2000

- "encounters between anglers and boaters will occur under this alternative, many of which may be undesired by one or both users. Because a significant number of these encounters may be undesired, user conflicts are very likely to result. They may occur when boaters pass directly through areas being actively fished where a broken line, entanglement or other interference with the fishing activity takes place. Conflicts can also occur when an actual encounter (visual or auditory) brings about a loss of solitude." Pg H-16 F.M.S.FS 2004 FEIS .
- *"Many anglers prefer to fish areas that are not being used by other recreationists such as boaters" (Harris & Bergersen, 1985)*[16] The 2007 Chattooga *Conflict & Capcity Analysis*
- *see Yellowstone boating analysis 1988 by NPS forwarded to the USFS in the spring of 2006..*

V: Assessment site was bias: "kayaker defined study zones"

The EA notes: *"The river itself provides a varying scene from a smooth flowing stream to a river with thundering falls and cascades, raging rapids, enormous boulders and cliff-enclosed deep pools.*[17]" The Chattooga's North Fork ranges from 50' wide shoals to 4' wide gorges, from steep bedrock channels, to boulders fields, to a low gradient rippling creek. The variety of physical topography insures that at almost all flow levels the Upper Chattooga contains a suitable spot for angling at all times. Conversely, kayakers are required to traverse the entire stream between access points and therefore inconsistency in flows and water depth could result in rating an entire segment as unboatable. Forcing all visitors to rate the recreational experience available along entire stretches of a river -between boater access points- pressures study participants to include narrow gorge areas that might be unsuitable for fishing access at higher flows with easier to access fishing sites.

Streams' physical variations make it impossible to evaluate flow levels for angling without being site specific. Anglers select discrete sites along the river corridor based in part on the ease-of-access associated with topography. Mr. Whitaker (from CRC) published *" anglers tend to need very little wadable area when they fish and seem amenable to moving up or down the river to find a good spot*"[18] Yet, the Chattooga survey created a false impression that fishability was uniform along the boater-defined study segments.

[16] Pg 68 Assessing Visitor Capacity & Conflict on the Upper Chattooga, 2007, USFS
[17] Pg 166 2009 Environemntal Assessment
[18] pg 70 Whittaker, D. , B. Shelby, W. Jackson, and R. Beschta. 1993. Instream flows for recreation: a handbook on concepts and research methods. U.S. Department of Interior, National Park Service, Anchorage, AK

The Chattooga recreational assessment zones were based exclusively on boater defined access points; this adds even more prejudice the assessment.

VI: Bank fishing compared to Wade-Based angling

Spin casting from the banks and shallows represents the majority of the anglers on the Upper Chattooga, yet the assessment remains overly focused on wade fishing for fly fisherman. The focus of the flow assessment portrays the more challenging conditions of wade fishing using fly tackle, in place of the more popular spin casting from the shore. Again the assessment avoids bank fishing flow assessment and uses wade-based angling (from the center of the stream) to assess flow ranges for anglers.

During the July 2006 public meeting, Doug Whitaker indicated that optimal flows for "Bank-based spin fishing" was higher than "wade-based fly fishing"[19]. In his 2006 Flow manual he noted that "*Some fishing opportunities are less flow dependent than others. Shore-based fishing with spinning gear on Alaska's Kenai River is excellent through a wide range, from mid-summer high flows to lower fall flows.*"[20] Yet, the Chattooga assessment reviewed and collected data on wade-based anglers exclusively, then presented this information as representative of all anglers. Again, this prejudicial analysis has biased the assessment conclusions and diminishes the validity of a FONSI.

VII: Chattooga Cliffs angling data is inaccurate.

The expert panels did not survey angling above Bull Pen Bridge; only one of the surveyed anglers were familiar with the Chattooga above Bull Pen Bridge. The only angling data associated with the area above Bull Pen was the 30 years of fishing log data supplied by the Whiteside Cove Association to the USFS in January 2007. In place of using 30 years of collected data, the assessment published speculative angling data; use data above Bull Pen was complete hypothesis.

According to the thirty years of angling data provided to the USFS , this section is fished consistently up to 750cfs, this matches the higher range of "optimal flows" for spin casting

[19] From Doug Whitakers July 2006 public Slide show presentation, *Chattooga River;Overview of Capacity Analysis*
[20] Pg 13, 2006 *Flows and Recreation A guide to studies for river professionals,* Whittaker,Shelby, Gangemi

collected during the flow study on the segment just below Bull Pen, this correlates too the range of data collected during the 1999 DNR angler survey for the larger stream downriver. However, none of the actual angling data -representing years of fishing and hundreds of anglers- were considered, instead highly speculative claims that most anglers would not be fishing above 350cfs was presented as a "scientific study" by the outsourced consultant.

VII: A Single-flow assessments should not be used to support flow-ranges.

The CRC 2006 Flow Manual warned that "*Fishability assessments at a single flow may be able to demonstrate whether a flow provides fishable water, but they are unlikely to provide precise flow ranges for different opportunities*.[21] Since only a single flow was assessed during the expert panel study, assessment of fishing quality for other flows are not determinent.

VIII: Historical facts are ignored.

The Historical review[22] of Chattooga management policy quotes the 1976 Development Plan as follows: *"the recent increase in floaters using the river has had a detrimental effect on the fishing experience. Conflicts have developed on certain sections of the river where floaters and fisherman use the same waters*" (p. 11819 Federal Register 76, also pg 89 of the draft EA).

Two primary points can be determined using this statement from the 1976 development plan.

1. **Chattooga Anglers and boaters were not "naturally separated" by flow levels in 1976, otherwise these documented conflicts would not be published.**
2. **Chattooga floaters have had a detrimental effect on the Chattooga fishing experience.**

Nothing found during the Visitor Capacity Study or the Environmental Assessment indicates that anything has changes since 1976 to indicate that expanding kayaking would not simply expand the conflict onto the Upper Chattooga.

[21] Pg 15 2006, *Flows and Recreation,* Whittaker,Shelby, Gangemi , NPS copyright 2005
[22] Chattooga River History Project; Literature Review and Interview Summary, 2006, Sumter USFS